

epoxy-coated cables, generally designated 612, can also be protected by a sacrificial coating such as zinc 614 in addition to the epoxy filling and or covering.

Another aspect of this invention is to use abrasive material 620 on the outside of the jacket 610. This is to reduce the necessary development length of the cable so that it doesn't pull out of the wall or footing in the event of an earthquake.

Claims:

1. A winder including:

an extra section;

said extra section including:

a gripper; and

a brake;

said extra section for controlling a wire force without having to change a pitch diameter of the gripper or a sprocket.

2. A winder according to claim 1 in which the brake is a stationary brake

3. A winder according to claim 2 in which the brake is liquid cooled.

4. A winder according to claim 3 in which the torque transmitted to the frictional element is reduced without gearboxes or chains.

5. A method of controlling a wire winder, said method including:

as a tower travels around a tank, generating a square wave from the wheel drive;

feeding said square wave to a counter and counting a number of said square waves;

comparing the number of counts with a number selected by an operator for a spacing location;

powering a proportional hydraulic valve, and thereby pressurizing fluid into an elevator hydraulic motor;

thereby rotating the motor until the spacing counter has counted the pre-selected number; and

shutting the hydraulic flow.

6. A method according to claim 5 in which the square waves generated from the wheels and elevator motor are from optical encoders and fed to a counter.

7. A method according to claim 5 in which the square waves generated from the wheels and elevator motor are from segmental commutator rings and fed to a counter.

8. A method according to claim 5 in which a strip chart recorder records information from various transducers as the tower travels.

9. A method according to claim 8 in which the paper is fed in direct relation to the movement of the tower so that the location of events can be related to the events.

10. A method according to claim 8 in which the controller automatically turns on the recorder on and selects an appropriate paper speed.

11. . A method according to claim 5 in which the square wave provides feedback for low cost proportional valves.

12 A method of placing seismic cables, in which epoxy is used to protect the seismic cables from liquids.

13. A method of using seismic cables according to claim 12 in which end caps are used to prevent liquid from entering ends of a cable and traveling through the

cable.

14. A method of using seismic cables according to claim 12 in which the cable is filled along its length with epoxy.

15. A method of using seismic cables according to claim 14 in which the cable is filled using an autoclave.

16. A method of using seismic cables according to claim 14 in which the cable is filled by pumping epoxy through the core.

17. A method of using seismic cables according to claim 14 in which the cable is filled by pulling epoxy through the core.

18. A method of using seismic cables according to claim 14 in which the cable is also protected by a sacrificially coating said cables.

19. A method of using seismic cables according to claim 14 in which the cable is also protected by a sacrificially coating said cables with zinc before applying epoxy filling

20. A method of using seismic cables according to claim 14 including applying abrasive material on the outside of the epoxy covering.

21. A wire winder system, including:

a tower for traveling around a tank,

a square wave generator for generation square waves as a function of motion of a wheel drive;

a counter for counting a number of said square waves;

means for comparing the number of counts with a number selected by an operator for a spacing location;

a proportional hydraulic valve, actuated in response to
said comparing means,

an elevator hydraulic motor; actuated by pressurized fluid
from said proportional valve to thereby rotate the motor
until the spacing counter has counted the pre-selected
number and shut the hydraulic flow.

motor are from segmental commutator rings and fed to a
counter.